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Cardiovascular mortality and morbidity in patients undergoing percutaneous coronary intervention after out-of-hospital cardiac arrest: a systematic review and meta-analysis

Spirito, Alessandro ; Gargiulo, Giuseppe ; Siontis, George C M ; Mitsis, Andreas ; Billinger, Michael ; Windecker, Stephan ; Valgimigli, Marco

Abstract: AIMS To appraise the burden of cardiovascular mortality and morbidity among patients undergoing percutaneous coronary interventions (PCI) after out-of-hospital cardiac arrest (OHCA). **METHODS AND RESULTS** Meta-analysis of studies assessing the cardiovascular mortality or at least one other pre-defined outcomes in OHCA patients undergoing PCI. Forty-nine studies of 301,902 patients (73,634 OHCA and 228,268 non-OHCA patients) were included. Compared to non-OHCA patients, all-cause mortality was higher (29% vs 4%). The cause of 39% of deaths among OHCA patients was cardiovascular; PCI was more frequently unsuccessful (9.2% vs. 7.6%) and there were higher rates of stent thrombosis (2.9% vs. 0.8%), myocardial infarction (1.7% vs. 1.4%), relevant bleeding (10.2% vs. 2.1%) and stroke (1.7% vs. 0.5%). OHCA patients compared to non-OHCA patients had a higher risk of all-cause mortality (risk ratio 6.4, 95%CI, 5.5-7.4), cardiovascular death (4.6, 1.1-19), unsuccessful coronary revascularization (1.4, 1.1-1.7), stent thrombosis (3.8, 0.6-22.7), myocardial infarction (1.4, 1.1-1.7), relevant bleeding (3.2, 2.5-4.1) and stroke (3.1, 2.3-4.3). **CONCLUSIONS** Almost one third of OHCA patients undergoing PCI die and more than one third of the fatalities are attributable to cardiovascular causes. The burden of ischemic and bleeding complications was consistently higher and the success rates of PCI lower among OHCA as compared to non-OHCA patients.

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